Econometrics 2 (Fall 2020)

Homework 7: Panel Data.

Due Wednesday on Oct. 22, 2020.

This estimates a panel regression with fixed effects via FGLS. See Ostergaard, Sorensen and Yosha (JPE, 2002) for details on the model and estimation.

Clean the data.

The data are real (1984) state level consumption (proxied by non-durable retail sales), and disposable personal income in logs.

Estimate using FGLS.

Benchmark Estimation

The benchmark model is

$$\Delta \log(c_{it}) = \beta_0 + \beta_1 \Delta log(y_{it}) + u_{it} \ .$$

The estimates and standard errors (in parenthesis) of β_0 and β_1, respectively, are

Benchmark Estimation (With Time Fixed Effects).

The model is

$$\Delta \log(c_{it}) = \alpha_t + \beta_1 \Delta \log(y_{it}) + u_{it}$$

The estimate and standard error (in parenthesis) of β_1 is

Risk Sharing Regression.

The model is

$$\Delta \log(c_{it}) - \Delta \log(C_t) = \beta_0 + \beta_1 (\Delta \log(y_{it}) - \Delta \log(Y_t)) + u_{it} \ .$$

The estimates and standard errors (in parenthesis) of β_0 and β_1, respectively, are

Excess Sensitivity Regression (with Time Fixed Effects).

The model is

$$\Delta \log(c_{it}) = \alpha_t + \beta_1 \Delta log(y_{it-1}) + u_{it} \ .$$

The estimate and standard error (in parenthesis) of β_1 is

Excess Sensitivity Regression (Controlling for Aggregate Fluctuations).

The model is

$$\Delta \log(c_{it}) - \Delta \log(C_t) = \beta_0 + \beta_1(\Delta \log(y_{it-1}) - \Delta \log(Y_{t-1})) + u_{it} \ .$$

The estimates and standard errors (in parenthesis) of β_0 and β_1, respectively, are

Excess Smoothness Regression (with State Fixed Effects).

The model is

$$\Delta \log(c_{it}) - \Delta \log(C_t) = \mu_i + \beta_1(\Delta \log(y_{it}) - \Delta \log(Y_t)) + u_{it} \ .$$

The estimate and standard error (in parenthesis) of β_1 is

Excess Smoothness Regression (with State and Time Fixed Effects).

The model is

$$\Delta \log(c_{it}) - \Delta \log(C_t) = \alpha_t + \mu_i + \beta_1(\Delta \log(y_{it}) - \Delta \log(Y_t)) + u_{it} \ .$$

The estimate and standard error (in parenthesis) of β_1 is